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इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके
Separate Paging is given to this Part in order that it may be filed as a separate compilation

श्रम मंत्रालय

अधिसूचना

नई दिल्ली, 18 मार्च, 1993

का.आ. 189 (अ) :—औद्योगिक विवाद अधिनियम, 1947 (1947 का 14) की धारा 17 के अनुसरण में, केन्द्रीय सरकार इंडियन एयर लाइन्ज, नई दिल्ली के प्रबन्ध-तंत्र के संबद्ध नियोजकों और उनके कर्मकारों के बीच, अनुबंध में निर्दिष्ट औद्योगिक विवाद में आर्बिट्रेटर श्री एम.आर. शिवारमन, डी.जी. सिवल एविएशन के पंचपट को प्रकाशित करती है, जो केन्द्रीय सरकार को 19-2-93 को प्राप्त हुआ था।

[संख्या एल-11013/1/92-आईआर (विविध)]

के.वी.बी. उन्नी, डैस्क अधिकारी

MINISTRY OF LABOUR

New Delhi, the 18th March, 1993

NOTIFICATION

S.O. 189(E).—In pursuance of section 17 of the Industrial Disputes Act, 1947 (14 of 1947), the Central Government hereby publishes the award of the Arbitrator, Sh. M. R. Sivaraman D. G., Civil Aviation, Safdarjung Airport, New Delhi-110003 as shown in the Annexure in the Industrial Dispute between the employers in relation to the management of Indian Airlines, New Delhi and their workmen, which was received by the Central Government on the 19-2-93.

[No. L-11013/1/92-IR (Misc.)]
K. V. B. UNNY, Desk Officer

AWARD

IN THE MATTER OF DISPUTE BETWEEN ICPA AND IA MANAGEMENT

1. THE DISPUTE :

1.1 The Indian Commercial Pilots' Association (ICPA) had issued a notice of strike on 13th October, 1992 to the Chairman-cum-Managing Director (CMD), Indian Airlines, which inter alia included issues involving safety of aircraft, passengers, pilots and other crew members in the light of the guidelines issued by the regulatory authority and the stated Indian Airlines policy from time to time.

1.2 Further on 10th October, 1992, the ICPA had issued a directive in the interest of flight safety to all its members as stated below :—

"1. Not to undertake any flight to from any airfield by day and night where the VASI|PAPI or Electronic Glide Path is not available/serviceable or calibrated.

2. (a) Not to undertake any flight to from Kathmandu Airport by night.

(b) In view of the two recent fatal mishaps at Kathmandu, not to undetake any flight to|from Kathmandu airport by Day unless the weather conditions existing are CAVOK repeat CAVOK.

3. Not to undertake any flight to|from any airfield where the NDB is the only navigational approach aid available. Places like Pune, Coimbatore, Raipur, Tejpur and Leh.

4. Not to accept any flight changes without a clear notice of 12 hours before the commencement of the flight.

5. All the members, to carry out Instrument approaches at all the airfield (wherever applicable) as a Mandatory requirement without all."

1.3 The above directive was followed by another directive of ICPA dated 14th October, 1992 to its members. This directive contains 14 points which to some extent duplicate the points contained in the strike notice as well as in the directive of 10th October, 1992. This directive is also reproduced below :—

"1. No landing will be executed on a runway not served by a serviceable|callbrated VASI|PAPI unless the runway is served by a serviceable|calibrated Electronic Glide Path. This applies for day and night operations.

2. In conformity with IA Operations Manual Para 3.12.17 all take offs and landings will be into wind No tail wind take offs and landings will be executed.

3. Not to undertake any flight to Leh. This operation has been found substandard by the DGCA.

4. In conformity with IA Operations Manual para 1.47.0 and CAR Series 1 Part II and GOC (M-6), not to execute a take off or landing from or to a runway where the take off and landing path is over water unless a life jacket is provided for all occupants. This covers take off R|W 27 Bombay landing R|W 09 Bombay. Take off R|W 26 Goa landing R|W 08 Goa.

5. In accordance with the DGCA instructions not to execute any intersection take offs.

6. In conformity with IA Operations Manual Para 1.14.0 not to accept any aircraft under MEL|CDL from major base i.e. Bombay, Calcutta, Madras, Hyderabad and Delhi.

7 In conformity with IA Operations Manual Para 11.3.0 pilots to execute only instrument approaches to land at all airfields.

8. In conformity with IA Operations Manual Para 1.38.0 no flight to depart unless destination whether is above the stipulated minima. Pilots not to execute low visibility take offs. Flights not to operate to any airfield where the minima is not filed.

9. The airline policy on fire fiighting and safety services laid down in IA Operations Manual Para 1.40.0 is considered unsafe. No flight to be operated to an airfield which does not comply with the ICAO policy. Minimum fire fiighting category required for B737|A320 is Cat-6 or above for A300 Cat-8 or above.

10. Pilots to report for duty only 35 minutes before the scheduled|revised departure and in compliance with IA Operations Manual Para 3.1.3 only accept to undertake the flight after receiving a complete briefing.

11. In conformity with IA Operations Manual Para 1.1 3, no flight to depart without standard cabin crew complement i.e. B737|A320|A300 (Four|Five| Eight cabin crew) respectively.

12. In conformity with IA Operations Manual Para 10.24.2 no flight to be conducted by two commanders. This is because the pilots are to exercise the privileges of their licences, P1 to fly as P1 only.

13. Pilots not to operate to designated international airfields and designated international alternates unless they comply with ICAO Annex. 14. This includes approach lights, standard runway markings, precision approach and runway lights.

14. Pilots not to operate flights to Jammu and Srinagar when special Indian Air Force arrival procedures apply unless the reported visibility is more than 5,000 meters and cloud base above the minimum safety altitude."

1.4 The above issue concerning air safety became an industrial dispute between the Indian Airlines and one section of their workmen represented by the ICPA, 53-F, Chowringhee Road, Calcutta. On the dispute it was agreed between the Indian Airlines and the ICPA before the Chief Labour Commissioner (CLC) to refer to the undersigned for arbitration the following two matters :—

(a) Safety measures mentioned in Directives No. ICPA|CAL|GS|CIR: 9|92 dated 10-10-92 and No. ICPA|CAL|GS|CIR: 13|92 dated 14-10-92; and

(b) Safety measures mentioned in demand No 1 in the Strike Notice No. ICPA|CAL|GS|CIR: 12:26|92 dated 13-10-92 served on the Chairman-cum-Managing Director, Indian Airlines, New Delhi.

2 PROCEDURE FOLLOWED IN THE ARBITRATION

2.1 The following procedure was adopted in the arbitration proceedings :

2.2 An informal meeting was held by me with the members and office bearers of the ICPA on 05-11-92. The ICPA was requested to give a detailed memorandum on the various points mentioned in their Directives dated 10-10-92 and 14-10-92 and in Demand No. 1 in the Strike Notice dated 13-10-92 served on the CMD, Indian Airlines. On 21st December, 1992 the IGPA submitted a detailed memorandum along with a letter dated 18-12-1992. Immediately on receipt of memorandum which ran into several hundred pages copies were made and sent to CMD Indian Airlines and National Airports Authority on 21-12-1992 and 23-12-1992 respectively for their comments.

2.3 Capt B. S. Gopal of Air India who was ex-Director (Trg) and ex-Director (Air Safety) was requested to provide technical assistance which Capt Gopal declined on account of his personal preoccupation. Shri Satendra Singh, Director Air Safety, DGCA was also requested to provide technical assistance in the matter.

2.4 In the meanwhile the Ministry of Labour published another notification in the gazette dated 02/07-12-92 wherein they called upon other employers and workmen who were not parties to the agreement between IA and ICPA regarding arbitration on safety issue but were concerned in the dispute to present their case before the arbitrator. As per this notification notices were issued on 21-12-92 to the following unions to present their views in writing. Copies of the document viz the directive of the ICPA dated 10-10-92 and 14-10-92 and that of the Strike Notice dated 13-10-92 were also enclosed.

1. Shri R. Ramanathan, General Secretary, Air Corporation Employees' Union, Viman Bhavan. ACEU Office, IA, Campus, Old Airport, Bombay-400029.

2. Shri Y. K. Singh, Vice-President, Indian Flight Engineers' Association, A-604, Greenfield Thakur Complex, Kandivali (E), Bombay-400101.

3. Shri Bikas Kar, General Secretary, Indian Airlines Officers' Association, Indian Airlines, Personnel Department, Chittranjan Avenue, Calcutta.

4. Shri M. Visweswariah, General Secretary, All India Aircraft Engineers' Association, 8-3 320/405B, Keerthi Departments, Yolla Reddy, Gudda Amirpet, Hyderabad.

5. Shri M. K. Biswas, General Secretary, Indian Aircraft Technicians' Association, Hangar-1, Calcutta Airport Calcutta.

6. Shri Bikas Sen, General Secretary, Airlines Radio Officers' & Flight Operations Officers' Association, 23/2/19, Khudiram Bose Sarani, Calcutta-80.

2.5 The Indian Flight Engineers' Association gave their comments vide their letter No. IFEA/IA/7311 dated 07-01-93. The Air Corporations Employees' Union also gave their comments on 25-1-1993. The Indian Airlines Cabin Crew Association gave their comments on 11-2-1993. The Indian Airlines Officers Association informed by a letter dated 25th January, 1993 that they had no comments. The Airlines Cabin Crew Association although not notified in the Labour Ministry's Gazette Notification gave a memorandum on 25th February, 1993. I thank all these associations for their cooperation. The other associations have not responded although reminded on 19-01-93.

2.6 The comments of the IA on the submission made by the ICPA were received on 20-01-93. The comments of the NAA were received on 19-01-93. Copies of the comments of both the IA and the NAA were forwarded to the ICPA on 25-01-93. On account of the delay by the parties, ICPA and IA subsequently extended the time period for the award till 28th February, 1993.

2.7 On 12-02-93, there was also a discussion with the representatives of the ICPA and the Indian Airlines on the matters in dispute. This discussion further clarified certain issues that have been raised in the memorandum submitted by the pilots and the views of the Indian Airlines thereon.

2.8 As the matter in dispute relating to air safety is directly connected with the responsibilities of NAA, they were requested to give their comments. Discussions were also held with them subsequently to understand their plan of action. I am grateful for the cooperation extended.

3. SUBMISSION OF THE ICPA

3.1 The submission of the ICPA could be broadly divided in the following groups :—

1. General—Under this group the ICPA has drawn the attention of the arbitrator to Chapter II, Article 7 of the Air Corporation Act 1953, the NAA Act 1986 Chapter III, Article 12, Section 4, 5 and 5A of the Aircraft Act, 1934. They have also drawn the attention of the arbitrator of the responsibilities and obligations of India under the Chicago Convention in regard to the standards and recommended practices of ICAO contained in their various Annexes to the Convention. They have also dealt separately with safety matters requiring immediate attention and action.

2. Matters pertaining to IA.—Under this heading they have dealt with the operations manual, its implementation and other issues relating to safety directly concerning the IA.

3. Matters pertaining to the DGCA.—This deals with safety matters, accident prevention and accident inquiry recommendations.

4. Matters pertaining to the NAA.—This largely deals with the responsibilities of NAA concerning Navigation, Communication and Landing Aids and Airport facilities.

5. Inspection of Airfields.—The ICPA has given certain on the following airfields :

Patna, Guwahati, Khajuraho, Varanasi, Coimbatore, Bhubaneswar, Ranchi, Baroda, Hyderabad, Dibrugarh and Indore.

They have also added the inspection reports of the DGCA Safety Cell on Leh and Mangalore Airfields, a 1989 Report on the inspection of Calicut Airfield by Senior Air Safety Officer of the DGCA.

6. Matters pertaining to ICPA directives.—Under this heading they have dealt with the various point on air safety mentioned in their directives of 10-10-92 and 14-10-92.

7. Appendices.—These appendices contain copies of letters written by Capt R. L. Kapoor, Director (Ops.) IA, on the Operation Manual, letters written to DGCA by the ICPA on various issues, copies of minutes of the meeting on IA operation to Leh airfield held by the DGCA on 10-07-92, copies of several useful papers on safety in-flight operation presented by various experts in the 20th Technical Conference of the International Transport Association held on 10-15 November, 1975, copies of several other letters written to DGCA, IA on diverse subjects on MEL, involvement of ICPA in accident investigation, minimum qualification of crew for A-320, a letter addressed to the then Cabinet Secretary on air safety rules and conducting inquiries, airport certification, pilot fatigue and flying two types of aircraft.

4. GENERAL COMMENTS ON ICPA SUBMISSION

4.1 At the outset, I would like to compliment the Indian Commercial Pilots' Association in producing a very useful document concerning various matters relating to air safety. I would also like to thank the Indian Airlines and its officials, the National Airports Authority and its officials and all other officials in the Directorate General of Civil Aviation for their views on the matter. I must also state that the discussions between the different parties were held in a very cordial atmosphere and were extremely useful in understanding the points of view of the pilots, the airlines, Airports Authority and the DGCA in matters relating to Air Safety.

4.2 Where there are different modes of transport that carry people and material across long distances, the transportation by air has always received a specialised treatment. The International Civil Aviation Organisation was formed as early as 1944, as it was universally recognised that in the matter of air transport, there was a fundamental need for a global understanding of the implications for safety

for passengers and goods transported by air. The other dimension to air safety, namely, the safety of the people on the ground, who for no fault of theirs, could also be victims of an air crash, instances of which there are many has also to be properly catered to. Therefore, the subject of air safety is quite dominant not only in the minds of the travelling public, who are the users, but also in the minds of the aircraft manufacturers, the crew operating the aircraft, the maintenance engineers, the operators and above all, the regulatory authorities of the respective countries.

4.3 Air Safety can be broadly divided into the following main responsibilities :—

(a) making the aircraft safe for passengers and the crew.

(b) making the crew safe for the passengers and skilled enough to operate the aircraft safely.

(c) making the airport and enroute facilities safe and useful for safe operation of the aircraft,

(d) making the passengers and the cargo safe for the aircraft and the crew.

4.4 The submissions of the ICPA largely relate to airport and enroute facilities, aircraft maintenance and to a certain extent on crew-training. The ICPA have, however, omitted the role of the pilots in the conduct of safe flights. The aircraft may be safe, the navigational and landing aids may be available but ultimately the pilots have to use them as per procedures and fly safely. The pilot has to be medically fit, mentally alert and disciplined enough to follow rules. The passengers, most of whom do not know anything about aircraft or flying have implicit faith in both the pilots as well as the aircraft when they enter it for the transportation. Therefore, while dealing with the subject of air safety, it is imperative to understand. that each item which contributes to air safety, is part of a systemic whole, and while being individually important to determine the safety level of the total. system it is not possible to expect safety if only certain aspects of the total system is taken care of. Therefore, while dealing with the issues raised by the ICPA. it may be inevitably necessary to deal with certain other items which may not be strictly within the matters in dispute. However, an attempt has been madn to adhere as closely as possible to the matters in dispute.

4.5 In the general issues the ICPA has alleged that none of the agencies in the country, namely, the Airlines, the National Airports Authority and the DGCA is fulfilling their responsibilities under the provisions of their respective acts. They have also stated that the standards and recommended practices of ICAO contained in the various annexes are only the bare minimum requirements and operators are expected to provide more than the minimum. In this context, it may be stated that the standards and recommended practices are required to be followed by the States with such modifications as may be considered necessary subject to their differences being filed with the ICAO keeping in view safety requirement One cannot lay down a measure of air safety. Whatever is necessary to ensure air safety should be provided taking into account various factors such as the type of aircraft being operated into an airfield, the frequency with which the operations are taking place. the environment of the airport and above all which may be the last but not necessarily the least, the resource constraint under which the airport authorities function. Therefore, if a paricular airport has got certain facilities for approach and landing, which may not be the best that could be made available, the operations into that airfield can be so timed that it may not be necessary to have all the modern facilities of landing aids that can be provided at an airport. If an airport does not have full instrument landing facilities. operations to these airports could be under other let down procedures but it does not mean that no operation can take place into these airports without jeopardising air safety. The operators on their side can always schedule their operations into these airports in such a manner that the aircraft is able to fly under VFR conditions and make a visual approach with all safety precautions adhered to. To that extent, I am unable to agree with the ICPA and their directive not to fly to certain airports in the country which have been under use for several decades. This is inconveniencing a large mass of people purposelessly.

4.5 In regard to the responsibilities of the DGCA as a regulatory authority it has the powers to issue directions in regard to air safety, but such directions should not be of a nature to interfere in the day-to-day functioning of the airlines. The airlines have their Directors of Operations, Training and Air Safety. The regulatory authorities the world over lay down rules, regulations. guidelines and issue directives on the basis of experience gained to ensure maximum air safety. It becomes the responsibilities of the Directors incharge of operational matters, training and air safety to ensure the implementation of the regulatory orders issued by the DGCA. It is also incumbent on the pilot-in-command as well as of the co-pilot of an aircraft to observe the rules and procedures and the directives issued by the regulatory authority and conduct the flight in such a manner as to provide maximum safety to the passengers, aircraft and the crew. Air Safety, therefore, per se cannot be the responsibility of any single agency to the exclusion of one or many. The responsibility is collective and failure of one sub-system in this whole system can affect air safety. can affect air safety.

4.6 It is also pertinent to point out that at least in the last two decades none of the air crashes have been direcly ascribed to either failure of maintenance or wholly to the non-availability of navigational and landing aids. At every stage. as has been rightly stated by the ICPA, the pilot-in-command has the last word whether to fly into an airport or not. The procedures for each airport are laid down as per the navigational and landing aids available. Even then the pilot-in-command has a choice to land or not depending upon the circumstances prevailing at that time. A navigational or landing aid is useful only to the extent a Pilot uses them. There are quite a few instances when pilots ignored all aids and crashed. It reinforces the point that air safety is achieved by a variety of elements working in coordination.

4.7 In this context, it is relevant to observe that the adequacy of supervision by the DGCA is dependent on the extent to which the organisation can be effective. The Aircraft Act and the Rules made thereunder were formulated at a time when Civil Aviation was in its infancy The Act and the Rules are proposed to be amended to provide for penal action by the DGCA for any transgression of its orders relating to Air Safety. This has become an urgent necessity now in view of the increasing number of aircraft in the air taxi sector as well as those owned by corporate bodies and individuals.

4.8 The DGCA has appointed two safety audit teams to conduct safety audit of the private air taxi operators. The extension of the safety audit to the Indian Airlines is recommended.

4.9 The DGCA has already started a procedure for inspecting Defence airfields along with the Defence services officials. Wherever the Defence services are not in a position to make good the deficiencies pointed out by the Joint Inspection Team, the National Airports Authority should step in to remove the deficiencies.

4.10 To sum up as far as the general issues contained in the ICPA submission are concerned, the following recommendations are made :—

(A) Immediate appropriate amendments to the Aircraft Act and Rules should be made to enable senior officials of the DGCA to take punitive action against erring agencies violating Air Safety Directives/orders given by the DGCA.

(B) Extension of the safety audit team of the DGCA to cover the safety aspects of the Indian Airlines.

(C) NAA to make good the deficiencies in the Defence airfields wherever civilian aircraft operate and the Defence authorities are unable to upgrade their facilities upto the requirement of civilian operations.

4.11 The ICPA has made separate submissions in respect of NAA, IA, DGCA and the items covered by their strike notice and their directives dated 10-10-1992 and 14-10-1992. I propose to deal with them separately and give my awards wherever considered necessary.

5. MATTERS PERTAINING TO NATIONAL AIRPORTS AUTHORITY

5.1 The ICPA has raised several issues concerning NAA, particularly on the airport navigational and landing aids and facilities.

5.2 ICPA has quoted a letter from the then DGCA wherein it has been stated that their data pertaining to the navigational and approach aids are made known to the operator and the latter has to satisfy themselves as to their adequacy and safety for passenger aircraft operations. In my view such a statement is an escapist approach which does not recognise the needs of different operators in the country for operating safety aircraft into and out of these airports. The requirements of airports are very well laid down in Annex. 14 on "Aerodromes" to the convention on International civil aviation.

5.3 These annexures contain standards and recommended practices. While it is mandatory to adopt the standards unless differences have been filed with ICAO, it is considered highly desirable to implement the recommended practices also. Airport authorities the world over make continuing efforts not only to adopt these standards and recommended practices but also improve on them to achieve the highest level of safety. What is required is for NAA to have a target date to adopt all the standards of ICAO which are mandatory and a phased plan for adopting ICAO recommended practices. In the ultimate, as all these facilities are required to be paid for by the operators who in their turn collect from their passengers, the constraint of resources cannot be put up an excuse indefinitely.

5.4 Earlier when the DGCA was responsible for the airports, involved procedural delays inherent in the system, the internal shortage of resources, and the fluidity of responsibility have been the causes for Indian airports not getting upgraded with the rapidity required for handling large and sophisticated aircraft. With the formation of IAAI and the NAA, as autonomous public sector enterprises to overcome these deficiencies, a new dimension has been added to the problem. While theoretically the DGCA has an overall responsibility of safety, their directions cannot easily be enforced on the Airport Authorities.

5.5 In view of the spurt in aviation activity, which is likely to continue with rapid economic growth, DGCA's overall responsibility for safety has to be properly delineated in respect of the autonomous authorities like NAA and IAAI.

5.6 With the above background, I propose to consider the submissions made by the ICPA in their chapter on matters pertaining to the National Airports Authority.

5.7 The ICPA has demanded the following minimum aids for approach and landing of jet transport aircraft at airfields.

(i) A VOR preferably co-located with DME.

(ii) VASI/PAPI to serve each designated runway.

(iii) At least a simple approach light system.

(iv) Medium/high intensity runway light.

(v) All airfields where jet operation is undertaken must be provided with an ILS, in the minimum time frame practical.

5.8 In regard to the demand of the ICPA for a VOR preferably co located with the DME in all airfileds to which jet transport aircraft are operating while I find that this is a reasonable demand, it is not a mandatory requirement. However, these are extremely useful aids for enroute navigation as well as for approach and landing. While it is possible to do reasonably accurate navigation and do safe landing with non-directional beacons, as there are certain inherent limitations associated with his equipment, I would recommend the location of a DVOR with DME in all the airports of India to which jet aircraft operate within a period of 24 months of the award.

5.9 From the information that has been furnished to me by the National Airports Authority, I find that the position regarding the availability of VORs, ILS and VASI/PAPI is as given in the Annexure attached. The following Defence airports do not have VOR/DME facilities :

Agra, Allahabad, Bhuj, Chandigarh, Gwalior, Jamnagar, Jorhat, Leh, Kanpur, Pune, Tejpur and Gorakhpur.

Of these airports, the most frequented ones are Agra, Chandigarh, Jorhat, and Pune. I recommend that NAA should instal DVOR in these airports within 18 months of the award.

5.10 I would recommend the installation of VOR/DME in all the defence airfields to which Jet operate by NAA within 24 months.

5.11 As regards Leh, the location of a DVOR is bound to be problematic with its mountainous terrain. However, DGCA and NAA should make a joint effort within the next three months to locate a site at Leh which could accommodate a DVOR covering at least the three valleys through which approaches are made into Leh; take off being only in one direction.

5.12 In the other airfields controlled by NAA, installation of VORs is proposed at Dimapur and Raipur by September 1993. To the extent possible this should be expedited.

5.13 The ICPA has demanded VOR in the following 14 airports. The position relating to each one of them as per NAA letter No. NAA/8-4/91-ARI dated 29th December, 1992 read along with their letter dated 4.2.93 No. NAA/M (P&D)/MDJ/EQ/93 is as follows :—

Leh—NDB is available. I have already recommended that attempt should be made to locate a site for VOR even to provide limited navigational aid. However, as I have also suggested the operation of A-320 aircraft, which has got IRS on board, to Leh. Operations could be started to Leh with this aircraft.

Jorhat—It is an AIF airport and it is recommended that NAA may set up a DVOR within the next 18 months in view of the lead time in procuring and setting up the unit.

Dimapur—The VOR is likely to be commissioned by September 1993.

Pune—Being an IAF airport it has got NDB and precision approach radar. The IAF has already agreed to provide PAR on request vide letter of Vice Chief of AIR Staff letter No. Air Hq./S17705/7/2/ATS dated 1st December, 1992. However, a DVOR should be set up within two years of the Award.

Chandigarh—It is an IAF airport having NDB and ILS. A VOR is being commissioned by December 1993.

Raipur—The NAA has indicated that VOR will be provided by September 1993.

Bagdogra—A VOR has already been commissioned in February, 1992.

Agra—At present there are only NDB and ILS facilities available A VOR is being provided by December 1993.

Gwalior—IAF airport which has got NDB and ILS facilities. A VOR would be provided by the end of 1994.

Coimbatore—The VOR available is near Ooty. The NAA will provide a VOR by the end of 1993 at Coimbatore itself.

Jamnagar—It is an IAF airport having only NDB. VOR would be provided by June 1994.

Bhuj—It is an IAF airport which has only NDB. Subject to IAF clearance a VOR should be provided by March 1994

Tejpur—It is an IAF airport having NDB. VOR is being provided by June 1994.

Car Nicobar—It is an IAF airport having NDB. A VOR is being provided by June 1994.

5.14 I recommend that operations to the above airfields should be continued but mostly restricted to day time flights in good visibility conditions till such time DVOR/VOR equipments are installed. As Agra, Pune, Gwalior, Chandigarh have other Radar facilities where the IAF has agreed to provide on request, I see no reason why flights cannot be operated to these aircrafts ICPA should operate the flights as before.

5.15 The second demand of ICPA is to have VASI/PAPI in all airfields to which jet aircraft operate I find that this is a reasonable demand. As per Annex. 14 to the Convention on International Civil Aviation para 5.3.6.1 "A visual approach slope indicator system shall be provided to serve the approach to a runway whether or not the runway is served by other visual approach aids or by non-visual aids, where one or more of the following conditions exist :

(a) the runway is used by turbojet or other aeroplanes with similar approach guidance requirements ;

(b) the pilot of any type of aeroplane may have difficulty in judging the approach due to :

(1) inadequate visual guidance such as is experienced during an approach over water or featureless terrain by day or in the absence of sufficient extraneous lights in the approach area by night, or

(2) misleading information such as is produced by deceptive surrounding terrain or runway slopes ;

(c) the presence of objects in the approach area may involve serious hazard if an aeroplane descends below the normal approach path, particularly if there are no non-visual or other visual aids to give warning of such objects ;

(d) physical conditions at either end of the runway present a serious hazard in the event of an aeroplane understanding or overrunning the runway ; and

(e) terrain or prevalent meteorological conditions are such that the aeroplane may be subjected to unusual tubulence during approach."

5.16 There are different types of visual approach slope indicator systems available such as VASIS, AVASIS, PAPI, TVASIS and ATVASIS. While these systems have their own merits individually, any one of them provided in an airport would be sufficient for convenience of operation of jet aircraft As per the information furnished by the NAA, almost all the airports indicated by the ICPA would be covered by the installation of either of the systems by end of April, 1993. However, I understand that the National Aeronautical Laboratory Bangalore, is developing a new visual approach slope indicator system which is likely to be far cheaper and more precise than the existing system The DGCA/NAA could inter-act with the NAL to evaluate this system as quickly as possible so that those runways in which the VASIS and AVASIS were installed long time ago and are scheduled for replacement could be provided with the new system.

5.17 The ICPA has also demanded that VASI/PAPI should be installed at each designated runway in the following 13 airports The position in regard to these airports as indicated by NAA vide their latest letter No. NAA/MO/NAV aid/ 93-143 dated 3rd February, 1993, is as follows :—

Agartala—Rwy 36/18 Now Available

Amritsar—Rwy 16 PDC 31-3-1993

Bhopal—Rwy 30 PDC 31-3-1993

Bhubaneswar—Rwy 32 PDC 30-4-1993

Khajuraho—Rwy 01 PDC 28-2-1993

Jaipur—Already existing on both Rwys (09 and 27).

Nagpur—Rwy 32 PDC 28-2-1993 (two bar AVASI)

Patna—3 bar VASI existing on both Rwy (07 and 25)

Lucknow—Rwy 09 PDC 28-2-1993 (two bar AVASI)

Varanasi—Rwy 09 PDC 28-2-1993 (three bar AVASI)

Udaipur—Rwy 08 PDC 28-2-1993 (two bar AVASI)

Jammu—AVASI existing on both Rwys (18 and 36).

Srinagar—AVASI existing on both Rwys (13 and 31).

5.18 The information given above was verified with the Member (Operations) NAA during the discussion held with him on 17th February 1993.

5.19 The ICPA has stated that VASI/PAPI is not existing in the following 11 airports On the basis of information furnished by NAA vide their letter No. NAA/MO/NAVAID/ 93-/143 dated 3rd Feb uary, 1993, referred to above, the position in regard to installation of VASI/PAPI in these airports is as follows :—

Dibrugarh—PAPI Rwy 05/23 PDC 28-2-1993

Dimapur—PAPI Rwy 02/30 PDC 31-3-1993

Bhuj—AVASI Rwy 05/23 available.

Car Nicobar—PAPI Rwy 02 and 20 PDC 31-7-1993

Leh—AVASI Rwy 07 existing

Silchar—PAPI Rwy 06 and 24 PDC 31-7-1993

Visakhapatnam—PAPI Rwy 05 and 23 PDC 31-7 1993

Coimbatore—Two bar AVASI Rwy 23 existing

Two bar AVASI Rwy 05 existing.

Imphal—Three bar AVASI available at both ends.

Port Blair—Available on Rwy 04

Raipur—PAPI Rwy 06/24 available.

5.20 From the above, it is seen that by 31-7-1993 in all the 11 airports VASI/PAPI/AVASI would be made available. On discussions with NAA, it was understood that commissioning of PAPI/VASI in certain stations have been inevitably delayed owing to vendor problems. However, the NAA is trying its best to expedite the completion Therefore, the ICPA should continue to fly to these airports but may restrict the operations to between sun rise and sun set under permissible weather and visibility conditions till the visual aids are commissioned.

5.21 In regard to the approach lighting system Annex. 14 to the Convention on International Civil Aviation lays down a recommendation as follows :

"Where physically practicable, a simple approach lighting system as specified in 5.3.5.2 to 5.3.5.9 should be provided to serve a non-instrument runway where the code number is 3 or 4 and intended for use at night, except when the runway is used only in conditions of good visibility, and sufficient guidance is provided by other visual aids

Where physically practicable, a simple approach lighting system as specified in 5.3.5.2 to 5.3.5.9 shall be provided to serve a non-precision approach runway, except when the runway is used only in conditions of good visibility or sufficient guidance is provided by other visual aids

Where physically practicable, a precision approach category I lighting system as specified in 5.3.5.10 to 5.3.5.19 shall be provided to serve a precision approach runway Category I.

Aprecision approach category II and III linghing system as specified in 5.3.5.20 to 5.3.5.36 shall be provided to serve precision approach runway category II or III."

5.22 The National Airports Authority in their comments on the memorandum submitted to the ICPA has dealt with the subject summarily. Going by the statement given by the NAA on the existing facilities and what has been proposed, it is seen that simple approach lighting system exists only in Ahmedabad, Jaipur, Nagpur, Ranchi, Trichy, Udaipur, Lucknow and Calicut. In addition to the above, the international airports of Delhi, Bombay, Calcutta and Madras have approach lighting systems of the appropriate category on different runways. Trivandrum has no approach lighting system of any type. Practically all the airports are used with the exception of a few like Dimapur and Dibrugarh both during day and night either by flights of Indian Airlines, Vayudoot or by other private category aircraft. All these airports in my view should be provided with the simple approach lighting system within a period of two years. In the airports where ILS is available appropriate approach lighting system should be installed within 2 years. Where, however, land acquisition is not necessary for the installation of the approach lights, the National Airports Authority should start the work forthwith and complete the task within a period of 12 months of the award.

5.23 Till such time the approach lighting system and VASIS are installed, operations to these airports should be restricted during conditions of good visibility. As one of the visual approach slope indicators would be provided by the National Airports Authority before the end of July, 1993, night operations could carry on after that in good visibility conditions with the availability of the runway edge lights.

5.24 As far as the demand for medium/high intensity runway lights are concerned, it is not mandatory for all runways. Simple runway edge lighting system will be sufficient for most of the runways in the country. International airports should be provided with medium/high intensity runway lights. The following airports however are reported to be having medium/high intensity runway lights :—

Agartala, Ahmedabad, Amritsar, Aurangabad, Bagdogra Bangalore, Belgaum, Bhavnagar, Bhopal, Bhubaneshwar, Bhuj, Bombay, Calcutta, Calicut, Chandigarh, Cochin, Coimbatore, Delhi, Dibrugarh, Guwahati, Goa, Hyderabad, Imphal, Indore, Jaipur, Khajuraho, Lucknow, Madras, Madurai, Mangalore, Nagpur, Patna, Ralpur, Rajkot, Ranchi, Srinagar, Tiruchirappalli, Trivandrum, Udaipur, Vadodara and Varanasi.

Apart from the above airports, the following airports are also reported to be having medium/high intensity runway lights :

Agra, Allahabad, Gorakhpur, Gwalior, Jamnagar, Jodhpur, Jorhat, Kanpur (Chakeri), Pune, Silchar and Tezpur.

5.25 Within 12 months of this award the rest of the serviceable runways of NAA airports to which IA operates in the night should also be covered with medium/high intensity runway lights. The NAA should give a schedule of implementation of this recommendation to the DGCA who will monitor its implementation.

5.26 It is seen from the report submitted by the NAA that the following airfields have already been provided with Instrument Landing System :

(1) Agartala,
(2) Ahmedabad,
(3) Amritsar,
(4) Bhopal,
(5) Dibrugarh,
(6) Guwahati,
(7) Hyderabad,
(8) Imphal,
(9) Jaipur,
(10) Khajuraho,
(11) Lucknow,
(12) Nagpur,
(13) Patna,
(14) Trichy,
(15) Varanasi,
(16) Delhi,
(17) Bombay,
(18) Calcutta,
(19) Madras,
(20) Trivandrum,
(21) Agra,
(22) Bangalore,
(23) Chandigarh,
(24) Goa,
(25) Gwalior,
(26) Jammu, and
(27) Srinagar.

5.27 The installation of ILS is reported to be in progress at Delhi Runway 27.

5.28 The NAA has indicated that ILS will be soon installed in the following airfields :

Bhubaneshwar, Coimbatore, Calicut, Aurangabad, Indore Ranchi, and Vadodara.

5.29 In the discussions with the NAA, it was understood that orders have been placed for the purchase of equipments and hopefully by December, 1993, ILS would be installed in all these airports.

5.30 From the above, I see that most of the airports to which jet aircraft operate will be covered by installation of ILS. There are certain airfields such as Port Blair, Mangalore, Udaipur, Rajkot, Raipur, which are not in the plan of NAA. These also should be covered within two years. It will be impractical to make a suggestion that all the airports which are usually in the operational ambit of jet aircraft should be covered immediately with the Instrument Landing System. Many of these airfields are only infrequently used by jet aircraft. Till such time full Instrument Landing System is provided or other systems such as simple approach lighting system, or VASI and VOR, are installed, operation to these airfields could be restricted to day time and during good visibility conditions.

5.31 These recommendations cast a burden of responsibility on the NAA and the DGCA. The NAA has to fix responsibility on the Airport Director/Officer Incharge of the Aerodrome/Officer Incharge Aeronautical Communication Station to ensure that the navigation and landing aids available are functional without any failure. Lack of punitive action against officers responsible who fail to maintain full serviceability of navigation, communication and landing aids leads to a degradation in the availablity of equipment. This situation could be remedied by providing for appropriate punishment to those officials who fail to discharge their responsibility. It is not out of place to point out here that DGCA takes action against pilots and engineers who are found guilty of omissions and commissions in matters relating to air safety. The progress of installation of the equipments and the effective working of all the aids installed in the airports has to be monitored closely by the DGCA.

5.32 While I have dwelt upon the responsibilities of the NAA and DGCA in regard to the provision and monitoring of aids for operation of aircraft into different airfields, I cannot consider this as complete unless I also highlight what the passengers and the regulatory authorities would expect from the pilots. Navigational aids and landing aids are useful only to the extent they are used. There have been instances in this country where pilots have ignored procedures and available navigational and landing aids and caused avoidable accidents. In these cases of accidents it was not because the aids were not available but because the pilots

choose to ignore them. It is, therefore, my recommendation that CVRs, FDRs and DFDRs of different flights should be monitored with a view to finding out whether pilots have adhered to the laid down procedures and used properly the navigational and landing aids. It has been pointed out by the learned Judge inquiring into the Imphal crash that it should be the responsibility of the Co-pilot also to monitor the instruments and to correct his commander should he chose to deviate from procedure and the use of aids available. I would like to reiterate this and state that the responsibility is not only individual for the commander and the co-pilot but also collective. The Directorate of Flight Safety of Indian Airlines should also regularly monitor the CVRs, FDRs and DFDRs. A system should be evolved by the Airlines whereby all aircraft are equipped with quick access recorders and all the flights are monitored. As it is possible to computerise the whole process a central monitoring unit should be set up in Delhi or in the CTE Hyderabad to analyse the flights. The feed back to the pilots on the basis of such analysis should be immediate so that corrective action can be taken. The ICPA as a professional body should also be fully involved in the monitoring of the CVRs, FDRs and DFDRs by the Airlines. It is their responsibility to draw the attention of their members to procedural lapses and also suggest corrective measures to the IA management particularly the CTE even where their members are involved.

5.33 The ICPA in its submission has broght out certain deficiencies observed by their members during inspection of the following airfields :—

Patna, Guwahati, Khajuraho, Varanasi, Coimbatore, Bhubaneswar, Ranchi, Baroda, Hyderabad, Dibrugarh and Indore.

5.34 The position regarding the deficiencies observed and steps taken by NAA to remove the deficiencies in respect of these airfields is given hereinafter.

PATNA AIRPORT

5.35 The ICPA has brought out the following deficiencies with regard to Patna airfields :—

Obstruction light at Control Tower is not working, there are no runway side strips and runway edge line markings, area around the runway is full of tall grass, parking bay marking and taxi guidelines give inadequate clearance, there is inadequate lighting, no suitable area for parking ground equipment, there is lot of interference on approach frequency 118.3 MHz, there is no fire hydrant, the VOR/DME is unreliable with poor range, date of last calibration of Nav aids is not available, fixed distance markers are not provided. RVR values are given when visibility is below 2,000 metres, the airfields is highly susceptible to cattle menace.

5.36 The National Airports Authority have, however, informed that most of the above mentioned deficiencies have been rectified, namely, obstruction lights are in working condition, side strips and runway edge line markings are available, side strips have been cleared of tall grass, guidelines on apron have been rearranged, alternate frequency 121.1 MHz has been provided due to interference on 118.3 MHz, adequate supply of water is available, a new DME has been installed but not yet commissioned, dates of calibration of Nav aids are available with the incharge of the airports. Fixed Distance Markers are available, mannual RVR is available and provided and openings in the wall have been plugged.

5.37 Inspection of Patna airfields carried out by DGCA officer revealed that action had already been taken or was being taken to remove the deficiencies mentioned by the ICPA. Adequate fire fighting equipment for Category 5 operations was being maintained. Some action, however, is still required to be taken regarding lighting of apron, parking of ground equipment, relocation of fire station watch tower and marking of runway threshold. This should be done within a reasonable period

GUWAHATI AIRPORT

5.38 The ICPA has brought out the following salient deficiencies with regard to Guwahati Airport :—

Nearby hills are not lighted, airfield has marked cattle menace, apron flood lights are only occasionally working, ambulance is not equipped, there is no direct communication with Dhaka FIC, RVR is not provided, bird scaring or shooting is never done, there is tall wild grass on the sides of runway, inadequate drainage/apron, only Category 6 fire fighting is available as against Category 8 required, runway edge line markings are not provided. Fixed Distance Markers need replacement.

5.39 With regard to the above observations of ICPA, the National Airports Authority have informed that they have either already taken action or action is being taken to remove the deficiencies. It has been informed that hazard beacons have been provided on top of the hills within a radius of 5 nautical miles from the airport, apron flood lights are working, ambulance is properly equipped, though DSC with Dhaka is not available, coordination procedures have been established, provision of mannual RVR exists, operational area has been cleared of bushes and wild grass, adequate drainage is available, fire fighting category available is 7 as against required category of 6, runway edge line markings have been provided and replacement of fixed distance markers shall be considered.

5.40 Though NAA has taken action to remove most of the deficiencies. It is essential that continuous efforts should be made to ensure that such deficiencies do not occur and time bound action is taken to remove the remaining deficiencies. The Airport Director should be personally made responsible to ensure that prompt action is taken with regard to any deficiency observed or reported by any agency including the pilots. Fixed distance markers should be provided immediately.

KHAJURAHO

5.41 The ICPA has brought out the following deficiencies with regard to the Khajuraho airport :—

Tall grass is growing in the operational area, there is no bird scaring or bird shooting, distance to go markers are not available, bomb threat and anti-hijacking procedures are not known to the staff, ATC does not have proper communication with FIR, there is no link between Bombay and Khajuraho although Khajuraho falls within Bombay FIR, terminal is susceptible to jet blast no runway edge line markings provided and runway surface is rough.

5.42 The National Airport Authority has informed that the bushes and grass in the operational area have been cut, bird scaring is done whenever required, contingency plan for anti-hijacking and bomb threat are available, communication with FIC, Agra and Varanasi is available, communication with Bombay is through FC-10, AFTN and P & T lines, runway edge line markings are available and adequate distance exists between taxing aircraft and the terminal building.

5.43 While NAA seems to have taken some action, additional efforts are required to remove the remaining deficiencies most urgently like educating the staff about bomb threat and anti-hijacking procedures, improving the communication with Bombay and other stations and provision of fixed distance markers. A DSC with bombay should be established immediately.

VARANASI AIRPORT

5.44 With regard to Varanasi airport, ICPA has brought out the following deficiencies :—

Inadequate communication with city, presence of dogs in operational area, runway and apron markings are faint, no NOTAM action is taken whenever fire fighting category is dropped, first-aid room is only a make-shift arrangement, DSC with Delhi have frequent break downs, no bird scaring or shooting is done, no fixed distance markers are provided, grass obstructs the OVASI, no anti-hijacking or action plan available, no runway edge, line markings provided,

terminal susceptible to jet blast, though designated as international airport it does not comply with the ICAO standards.

5.45. The National Airports Authority have informed that sufficient telephones and taxis are available for communication and transportation with the city, repainting of runway, apron and taxi-way markings is in progress, NOTAM action is always taken whenever fire fighting category drops, first-aid box has rquired medicines, DSC with Delhi is being maintained serviceable, bird scaring and shooting is done whenever observed, AVASI site is maintained clear of grass, runway edge line markings are available, reasonable safe distance between terminal building and taxising aircraft is available and facilities for International operations are available on a restricted basis.

5.46 Inspection of Varanasi airport carried out by DGCA officer revealed that action is still required to be taken by NAA on a number of items, for example, the operational fence or wall requires to be repaired to remove the gaps, marking of bays needs to be improved, area for parking ground equipment should be designated, grid map is not displayed in the fire station and the maps available in the crash fire tenders are not readable, fixed distance markers have not been provided, there is a free access of stray dogs, in apron, first-aid kit is inadequate, AVASI on Runway 09 was unserviceable and illuminating landing direction/wind indicator is not provided, NAA should ensure that time-bound action is taken to remove these deficiencies and the Aerodrome Officer Incnhnarge should be personally made responsiole for this job. The time limit I would suggest is two months after the date of the award.

COIMBATORE AIRPORT

5.47 The ICPA has brought out the following salient deficiencies with regard to the Coimbatore airport :—

The surrounding hills are not lighted, no bay and taxi guidelines on apron, missed approach procedure of Runway 23 takes the aircraft into Sulur local flying area, no updated search and rescue Air Safety Circulars are available, watch tower and fire station are not manned and the watch tower does not have proper communication with fire station and ATC, static water tank has very limited capacity, ambulance does not have necessary equipment crash fire tenders do not have serviceable equipment, Sulur and Coimbatore have common VHF frequency whch causes confusion in communication, bird shooting is never done, anti-hijacking/bomb threat plan is not available, runway edge line markings not available and no fixed distance markers are provided.

5.48 With regard to the above observations, the NAA has informed that no hill requires obstruction lights, watch & ward services are strengthened, standard taxiing and parking guidance markings are not possible due to parking orientation depending on high wind condition, missed approach procedure of Runway 23 does not conflict with local flying area of Sulur, search and rescue and safety Circulars are available, intercom and walkie talkie sets are available between fire station and ATC, enough water supply is available for the fire tenders, all equipment is available and serviceable, Sulur has been provided with Coimbatore frequency for monitoring only and operational frequency of Sulur is different, anti-hijacking/bomb threat plans are available and runway edge line markingss and fixed distance markers are available.

5.49 Though NAA has done considerable work in removing the deficiencies, needless to emphasise that whatever deficiencies still remain should be immediately acted upon and continuous efforts should be made to remove any deficiencies observed or reported by any agency including the pilots.

BHUBANESWAR AIRPORT

5.50 The ICPA has brought out the following salient deficiencies in respect of the Bhubaneswar airport :—

Deep trench exists just before beginning of Runway 14, jackals fequently come on operational area at night, parking of more than one aircraft at apron is very difficult, exit from apron towards from runway is on an unslope and hence considerable power has to be opened for taxiing, there is no jet blast protecion, Jeppesen charts do not depict the location and limits of the traffic area of the nearby airport at Chabatia, runway profile has steep slopes and variable gradient, grass cutting is not done frequently, grass obstructs the view of the VASI, kind sock is not visile during night operations, anti-hijacking with bomb threat plan is not available and fixed distance markers and runway edge line markings are not provided.

5.51 The National Airports Authority in this regard has informed that runway 14 is proposed to be extended by 2,000 feet which will cover the existing trench, no jackals have been sighted in the recent past, parking space for two Boeing 737 aircraft is available and a new apron has been planned, adequate space is available within terminal building and the taxiing aircraft, gradient of runways within permissible limits, grass is cut regularly and VASI view is not obstructed, electric cable is being laid to illuminate the wind sock, anti-hijacking and bomb threat plan is available, runway edge line markings are available but fixed distance markers are not available as it is not mandatory. Fixed distance markers should be provided immediately.

RANCHI AIRPORT

5.52 With regard to Ranchi airport, the ICPA has reported the following salient deficiencies :—

Obstructions near the airport are not visible, wind sock is not visible during night, Jeppesen chart is not updated, the turn from taxi track to apron is very sharp, there is a garbage dump near the airport, the airport boundary wall is broken, inadequate security arranagement at the airport, anti-hijacking/bomb threat action plan is not available, no provision of giving spot wind in the control tower, runway edge lines and fixed distance markers are not provided.

5.53 The NAA has Intimated that day markings have been provided on all the obstructions lights have been provided on two obstructions and arrangements are being made to provide lights on the other obstructions, wind sock is lighted, the guideline markings for turn from taxi track to apron have been re-done, arrangements are being made with the State Government to shift the garbage dump, the boundary wall has been repaired, the security arranagements have been strengthened, anti-hijacking and bomb threat action plan are available, wind sock is lighted, runway edge line painting work is in progress but fixed distance markers are not provided as it is not mandatory.

5.54 From the above, it is seen that NAA is yet to compleate action on a number of important aspects like shifting of garbage dump, painting of runway edge lines and other markings etc. This work should be completed most urgently and it should be ensured that the deficiencies are rectified within two months of the award.

HYDERABAD AIRPORT

5.55 With regard to Hyderabad airport, the ICPA has brought out the followig salient deficiencies :—

Hill on approach of runway 27 is not lit with obstruction lights, parked aircraft on IAF side have inadequate lighting, a lot of rubber on runway touch down zone, parking bays and taxi guidelines need remarking, fire fighting equipment is not fully geared to category 8 requirements, no RVR reported when visibility is below 2,000 metres, garbage dumps exist all around the airport, inadequate information on Jeppesen chart about gliding/training air space at Nadirgul, though designated as international airport does not comply with ICAO standards, runway edge line marking and fixed distance markers not provided.

5.56 The NAA in this regard has informed that due to presence of hill, threshold of Runway 27 has been displaced, action is being taken to instal obstruction light on the hill, height of the boundary wall has been raised, adequate lighting of parked aircraft on the IAF side has been provided, touch down zone is free of rubber, parking bays and taxi guidelines have been painted recently, fire fighting category main-

tained is 8 as against the required category of 7, mannual RVR is provided when visibility falls below 1500 metres, removal of garbage dumps has been taken up with the State Government, NOTAM action has been taken about Nadirgul airspace, Hyderabad is not an international airport and facilities for limited international operations are provided, edge line markings and fixed distance markers are available.

5.57 It is seen from the above that the NAA has taken steps to remove most of the deficiencies.

DIBRUGARH AIRPORT

5.58 The ICPA has brought out the following salient deficiencies with regard to the Dibrugarh airport:—

> Runway has lot of depressions and is prone to water-logging, hangar, Control Tower, TV mast and NDB antennae do not have serviceable obstruction lights, apron is surrounded by bushes, drainage are chocked, grass cutting is not done, dual control over perimeter wall results in no control over intrusion/dog nuisance, RVR not provided and visibility is less than 2,000 metres, open garbage dumps near the airfield attract birds, communication with Dibrugarh is always jammed, fire fighting category is only 5 whereas requirement is category 6, approach lighting system is not provided, ATC uses the metric system of altitudes when communicating with IAF air traffic which causes confusion when civil aircraft are also operating, anti-hijacking and bomb threat action plan are not available, no runway edge line markings and fixed distance markers are provided.

5.59 The National Airport Authority in this regard has informed that the runway resurfacing work is likely to start from March, 1993, obstruction lights have been provided, apron surroundings are now clear of bushes, scopograph for reporting RVR when visibility is below 2,000 metres is not avaliable, there is no garbage dump near the airfield, no jamming of VHF frequency, there is water logging only during monsoon and runway resurfacing has been planned to overcome this problem, approach lighting system is planned to be provided, fire fighting facilities of category 6 are provided, ACT uses feet to give altitude information, edge line marking and fixed distance markers are available

5.60 From the above it is noted that while many of the deficiencies have been removed by NAA, a number of them are yet to be rectified. No plan of action and a time schedule for remobal of the remaining deficiencies has been indicated. In view of the fact that some of the deficiencies require time for rectification a time limit of 12 months will be sufficient for improving the airport. The NAA should prepare a plan of action and a specific time schedule within four weeks of the receipt of the award and send it to the DGCA who will monitor the implementation While the permanent improvement may take time, the definciencies that can be rectified immediately should be corrected. As regards the calling of the altitudes, it should be only in one denomination, namely, feet or flight levels so that there is absolutely no room for confusion.

INDORE AIRPORT

5.61 With regard to Indore airport the ICPA has reported the following salient deficiencies :—

> There are gaps in the fencing, apron guidelines are very sharp turn and wavy, a lot of runway lights are not working/broken, turbulence in the approach path of Runway 25 Cotrol Tower cannot see the approach path of Runway 07, no DSC with Nagpur, fire fighting category maintained is 5 though Boeing 737 requires category 6 no water supply for crash fire tenders at the airport, open garbage lies in a bhuri colony in the left down wind area of runway 07, no scaring or shooting of birds, ambulance not properly equipped, anti-hijacking/bomb threat plan not available, runway edge line markings and fixed distance markers are not provided.

5.62 The NAA has stated that fencing has been repaired, guidelines have been reainted, runway lights are serviceable, Control Tower with a 360 degree vision is being proposed. DSC is available with Bombay, fire fighting category 6 is provided, ambulance has been equipped, contingency plans for bomb threat and anti-hijacking are available, enough water supply for crash fire tenders available, While it is appreciated that NAA has taken action to remove some of the deficiencies as regards the others where action has been proposed, a time schedule should be laid down for completion within 12 months as they are not difficult to be implemented. It is also suggested that the runway at Indore should be extended to 7500 feet within the next 24 months. This will provide a comfortable safety margin for aircraft to land during monsoon weather. It might also enable Indian Airlines to operate A 320 category aircraft to Indore at a future date.

5.63 From the study of the airports conducted by the ICPA and a few airports which have been thoroughly inspected by the DGCA pilots such as Alhmedabad, Amritsar, Patna, Goa, and Vijayawada is seen that there are certain common deficiencies such as runway surface being not smooth, grass not being cut, runway edge lines and taxi way makings being faded, and dumaged fencing. I feel that there should be no cause for such deficincies to persist, It appears that the officers incharge of aerodromes should exercise greater supervision over the operational area as is required.

5.64. This analysis of airports, airport deficiencies and the steps that have been outlined for improvement, only reinforces the need for implementation of aerodrome licensing. Action is already under way to set up a Directorate of Aerodromes in the DGCA.

6. Matters pertaining to Indian Airlines

6.1 The ICPA has raised several issues pertaining to the Indian Airlines, most of which concerned the practice of procedures, Rules and instructions contained in the Operations Manual. The main contention is that flight operations of the airlines are not in accordance with the Operations Manual leading to non-standard operations, flight crew indiscipline and violation of air safety rules. It is to be appreciated that ICPA has rightly poited out that one of the basic causes of all recent Indian Airlines crashes was inadequate crew task sharing, lack of attention resulting in vital instruments being not monitored and the crew not adhering to the standard operating procedures

6.2 As regards observance of discipline in the air is concerned, even the ICPA has to admit that it is the pilot-in-command who has the responsibility of carrying out his flight in accordance with procedures laid down not only in the Operations Manual of Indian Airlines, but also other rules and orders issued by the regulatory authorities, soon after he enters the cockpit and takes command of the aircraft. It is for this reason that the Indian Aircraft Rules specifically provides for the responsibilities of the pilot-in-command. I, therefore, feel that the observance of rules and regulations in the air and on the ground when the aircraft has been taken commad of by a pilot-in-command must necessarily be that of the pilot who has taken over the charge of the aircraft. The Indian Airlines can only lay down the procedure, rules, and regulations. Similarly the regulatory authority can only lay down the rules and issue guidance circulars but ultimately the responsibility to carry out a safe flight rests on the commander and the co-pilot. Nobody or any association can deny this.

6.3 The question that arises in this context is how to instil in the cockpit crew the motivation to observe this discipline meticulously. This has to be inculcated only during the initial training, the refresher courses and the various checks that are carried out in the Central Training Establishment of Indian Airlines. This has to be supplemented by periodical random checks by senior pilots of the Indian Airlines. The DGCA has issued letters and circulars to Indian Airlines from time to time requesting them to carry out such checks including that of sending senior pilots as observer pilots to ensure that the procedures are properly carried out. It is in this context that the monitoing of the CVRs and DFDRs assumes significance. I have elsewhere suggested that this monitoring should be done without fail. I would reiterate it again that this is extremely important for ensuring compliance of rules and regulations relating to safety by the cockpit crew.

6.4 I recommend that Indian Airlines should immediately examine in depth the existing training procedures in the CFIL, if necessary, even by a professional body from outside and reorganise training programmes in such a manner that discipline is inculcated as a passion amongst the pilots. Discipline can never be enforced by mere punitive action. It is a state of the mind. It has to be cultivated by every individual be it a pilot or anybody else. Therefore, while I agree with the sentiments expressed by the ICPA, a remedy to this situation is only through a cooperative effort by both the pilots and the organisation as a whole. This would become easier if the pilots are involved in the day-to-day affairs of the Airlines relating to aircraft operations. This involvement alone can bring in a togetherness of the entire employee community of airline and automatically enforce a desired discipline. The management of Indian Airlines should also ensure that to achieve this objective they appoint the Directors of Training and Operations of Air Safety with great care.

6.5 A reference has been made to para 1.4.7 of the operations manual relating to carriage of life jackets. This does not require any reproduction. The ICPA has stated that CAR I Series is not being complied with. The CAR I Series lays down that all aeroplanes on flights over water shall be provided with one life jacket for each person on board: 1. When flown beyond the gliding distance or 2. When flown beyond 50 nautical miles away from the land or 3. When the take off or approach path is so disposed over water, that in the event of a mishap there should be a possibility of ditching. I have considered this provision carefully I do find that there is a lack of clarity, particularly when para 3 is considered. If para 3 is considered independently, then Indian Airlines flights to and from Bombay and to and from Goa are required to carry life jackets as the take off and landing paths are disposed over water. Modern passenger aircraft are type certified after fully ensuring that where there are only two engines in the case of one engine failure, the aircraft should be able to maintain a given degree of claimb, speed and cruise performance With this criteria two engine aircraft are even certified for ETOPS over water. Failure of both engines are extremely remote. Therefore for IA domestic operations to/from Bombay and to/from Goa there is no great urgent need for equipping the aircraft with life jackets. However, to be extra careful it is recommended that all these aircrafts are provided with life jackets within a period of 24 months.

6.6 The ICPA has also raised an issue concerning FDTL. As this matter is subjudice I do not propose to deal with it here.

6.7 In regard to flights to Kathmandu, the Indian Airlines has confirmed that they have laid down special qualifications for the pilots and they have included VOR Kathmandu SIERRA approach—go round—land exercise in the IR/LR training syllabus of A-320 simulator All the A-320 pilots who operate to Kathmandu should be sent to the simulator to practise approaches as well as emergencies. This should be complete preferably before the end of March, 1993.

6.8 I would still not consider this as sufficient for a high level of safety. In view of the fact that Kathmandu airport does not have Instrument Landing System, and it is surrounded by high mountains. Indian Airlines should reschedule its flights to Kathmandu so that there is no operation into and out of Kathmandu between sunset and sunrise

6.9 The DGCA has already recommended to the Indian Airlines that operations to Leh by Boeing 737 aircraft should be replaced by A-320 aircraft. I suggest that before the start of A-320 operations to Leh, the Indian Airlines should discuss the methods and procedures to be followed in a meeting with all the pilots of the region operating A-320 aircraft. Suggestions should be invited from experienced pilots who have been regularly flying to Leh and on the basis of this first flight to Leh by A-320 without passengers should be carried out by two experienced examiners who have the knowledge and background of operating to Leh and its terrain conditions. Indian Airlines also should send a few more commanders and Co-pilots to Leh along with the examiner doing the test flight so that take off and landing in Leh airfield can be practised and a well regulated procedure can be worked out to be followed by the pilots during regular schedule operations. During the trial flights at Leh, the commander should also consider what procedures to adopt during emergencies, such as engine failure and they should lay down the procedures after being satisfied with them. It will be necessary to instal these procedures in the simulator so that regular practice of emergencies can be given to the pilots. DGCA officers involved with air safety should also participate in the working out of these procedures. I would also recommend interaction with the Air Force whose senior pilots are regularly flying large IL-76 aircraft into and out of Leh before finalising the procedures. In any case, operations into Leh can be conducted only when there is permissible weather. The NAA should immediately evaluate the possibility of locating a VOR even if it provides limited navigational facilities as already recommended.

6.10 This however, does not deal with the problem of flights from Jammu to Leh. I, see that the runway length available both on runways 18 and 36 are 6,000 and above. This airport is also equipped with NDB, LS and DME. Therefore, adequate all navigational and landing aids are also available. In my view, I don't see any major problem, in operating A-320 flights to Jammu and the sector length from Jammu to Leh being short it does not require the uplift of large quantity of fuel. When I compare the facilities available in Jammu with those in Calicut, I do not find any significant difference. On the contrary, the problems of a table-top runway are not there in Jammu. Further, ILS/DME facility is also available which is not yet available in Calicut. The ICPA pilots have been operating without any complaint to/and from Calicut to Sharjah even though the DGCA had expressed reservations about margins of safety available for MTOW operations. In the circumstances, I would recommend that Indian Airlines consider seriously using only A-320 for their Delhi-Jammu-Leh sector. If there are some minor problems relating to taxi tracks etc. they should be got removed quickly. In the short run they could operate Boeing 737 aircraft equipped with Omega navigation system or GPS even though the latter is not yet approved by ICAO as a standard equipment. GPS will enable the pilot to cross check his position with reference to other aids.

6.11 The ICPA has also pointed out inter alia the following:—

1. Pilots, co-pilots with inadequate experience are allowed to operate to airfifields requiring special qualifications.

2. Airlines is not providing adequate briefing and training on hijacking, bomb on board procedures, on board fire fighting, evacuation procedures etc.

6.12 The IA has laid down qualifications for pilots who operate to selected airfields this should be rigorously enforced.

6.13 The Indian Airlines has commented that the subjects mentioned by ICPA are covered by audio visual aids films, lectures and simulator training For medical emergencies pilots are deputed to Institute of Aviation Medicine Bangalore. On an inquiry from the Indian Airlines, it was revealed that in the last two years no one has been deputed for such training It is obvious that there is a lack of attention in this area.

6.14 The Indian Airlines must draw up a schedule for sending pilots for this training programme in the Institute of Aviation Medicine, Bangalore. The cabin crew should also be given this training by experts from the Institute of Aviation Medicine. A time schedule should be drawn up to complete this training requirement within a reasonably short period Action should also be taken against pilots who refuse to go for this training. The pilots and cabin crew who refuse to go for his training should not be allowed to fly till he/she completes the training programme successfully.

6.15 The ICPA has also drawn the attention of the arbitrator that the Director of Operations should be a qualified person. We have seen the specifications in this regard as laid down in FAR 121.59. There are no such provisions at present in the Indian Aircraft Rules or in any of the CARs. It requires examination in the light of practices obtaining in the U.K. and Australia, as to whether it is necessary to issue a Civil Aviation Requirement in this regard particularly because air taxis also being allowed to operate in this country.

6.16 I would urge that officers of the level of Directors particularly in operations and Air Safety should be more concerned with the management problems of operations and the details of ensuring air safety rather than going out regularly on flights. It is for the management of the Indian Airlines to ensure that their Directors and Deputy Directors rise to the level of their overall responsibilities and provide the necessary guidance, supervision and assistance to the line pilots. It has been observed that the Directorate of Air Safety of Indian Airlines plays only a minimal role in matters relating to Air Safety or at least this is the impression that is gathered from the replies submitted by Indian Airlines. There should be greater interaction between the Directorate of Air Safety, Indian Airlines and the Directorate of Air Safety, DGCA, as the objective of both is to ensure safe air travel. I suggest that the Indian Airlines management while selecting the Directors of Air Safety and Operations must ascertain that the aspirants would devote their full time in the fulfillment of the job responsibilities of their posts. Undoubtedly, the Indian Airlines management may have to provide necessary incentives to the incumbents of these posts.

6.17 The ICPA has objected to aircraft being allowed to fly with snags under the garb of their being covered by the minimum of equipment list. I have considered this question very carefully. The manufacturer provides airlines with the minimum equipment list specific to an aircraft. The operator in consultation with the regulatory authority sometimes modifies this list usually making it more restrictive. I appreciate the concern of the ICPA that aircraft should not be allowed to fly with snags. They have also alleged that the DGCA have given concessions to the tune that the aircraft even after night stop at base could be despatched with snags under MEL within one hour of scheduled departure. The Indian Airlines have stated that the MEL/CDL is only to ensure regularity of operations by reducing delays due to malfunctioning of non-essential aircraft equipment and the commander should try and make every effort to operate the aircraft within the provisions of MEL and CDL. They have also added that the airline policy gives pilot-in-command the flexibility to use his own judgement whether to continue the flight or not by weighing the conditions that exist.

6.18 The DGCA has already issued instructions that aircraft while leaving the base station should be cleared without shags. When aircraft transits a base station during flights, if any snag is observed on any equipment which is unrelated to air safety, the aircraft could carry on, provided the time available at the base station is not sufficient to rectify the snag. However, if time is available this snag should also be rectified. No aircraft should be allowed to carry snags beyond 48 hours. As engineers are positioned in outstations other than bases, sufficient spares should be made available at these outstations to enable them to rectify snags immediately.

6.19 The philosophy of an MEL for an aircraft is to list out certain items which do not effect the safe operation of aircraft even if they are not in working condition. This should not deteriorate into a situation where the defective items are allowed to continue on the pretext of there being an MEL even though it may not directly affect air safety. It will be the responsibility of the engineering organisation to ensure that the MEL is not abused. The Airworthiness authorities of the DGCA must periodically ascertain in respect of each aircraft as to how many snags it has carried without rectification and for what length of time. This should be computerised to enable the Directors of Airworthiness and his other officers to enforce proper maintenance discipline.

6.20 I would like to make one general suggestion in this regard for IA to consider. In every important base there should be a Flight Operations Controller of sufficient seniority who should have the authority to decide and direct any department/section of IA to ensure the proper safe and punctual conduct of flight operations. This officer should be accessible to all, viz. Pilots, engineers, ground handling and commercial staff for their problems relating to operations. Such controllers should be trained in all disciplines of airlines operation to an extent that he or she can intervene in a constructive way to solve problem. He/she should be available near the Apron at peak traffic times so that he/she can be effective.

7. Safety matters pertaining to DGCA.

7.1 The ICPA has stated that the present system of investigation into incidents and accidents is not achieving the desired effect since accidents are still taking place for the same basic probable causes. It is appreciated that the purpose of our investigation of accidents should be more to find out why and how an accident occurred rather than determining who or what is responsible for the accident which is also important. The ICAO Annex. 13 which deals with accident investigation states the purpose of investigation of accident as follows:

> The fundamental objective of the investigation of an accident or incident shall be the prevention of accident and incident. It is not the purpose of this activity to apportion blame or liability.

7.2 The ICPA has desired that professional associations should have at least an observer status in the investigation of accidents. At present accident investigation is conducted as per provisions of aircraft Act and Rules. Wherever a Committee or a Court of Inquiry is appointed to investigate an accident, professional associations are given opportunities to present their points of view. At present there is no provision in the rules to involve directly or even as an observer any professional body unless the Court or investigation body so desires. However, I consider it necessary that the professional bodies should be given copies of the reports prepared by Investigation Officers, Courts and Committees of Inquiry as soon as they are available. Periodically seminars should be conducted to which professional bodies and other professionals should be invited to discuss the findings of such investigations and to evolve procedures to prevent the occurrence of incidents and accidents.

7.3 The ICPA has also stated that recommendations made by the Courts and Committees of Inquiry are not implemented or action taken is only on files. I would not agree on this as a committee in the office of the DGCA regularly monitors the implementation of recommendations of Committees and Courts of Inquiry. It is true that in certain cases the implementation of cerain recommendations may be tardy but this may be due to, not want of effort on the part of the persons involved but on account of inherent constraints such as where changes have to be incorporated in the design features of an aircraft or where heavy capital investments are involved.

7.4 The ICPA has also listed out recommendations of Courts of Inquiry concerning the DGCA, IA, NAA and Met. Department. I believe that the Government is fully seized of the recommendations and are taking steps to implement them.

7.5 Periodically the Directors of Operations and Air Safety, the NAA, the IAAI, the Met. Department, representatives of Pilots', ATCOs and Engineers should meet under the aegis of DGCA to discuss various issues concerning safety and to monitor implementation of suggestions emerging in the meetings.

8. MATTERS PERTAINING TO ICPA DIRECTIVES While many of the matters mentioned in this directive are covered in the foregoing paragraphs still for the sake of convenience and clarity I am giving my award on each one of the points raised in the directives as below.

(A) Directive No. ICPA : CAL : GS (CIR : 09-92 dated 10-10-1992.

Directive No. 1

VASI/PAPI or a similar aid will be provided by NAA by the end of July, 1993, the requirement of pilots would be met and Pilots should therefore fly to these airfields during sunrise to sunset under permissible weather conditions.

Directive No. 2

Regarding flights to Kathmandu. In view of the multifarious problems associated with hilly terrain and limited

navigational landing facilities, Indian Airlines flights to Kathmandu should be scheduled to take place only between sun rise and sun set.

Directive No. 3

The ICPA has stated that the non-directional beacon is by and large out-dated and is rarely used as an enroute navigational aid. Irrespective of what the ICPA has stated the fact remains that in the procedures for air navigation services Document 8168-OPS/611. Volume II, page 3-20, Chapter IV dealing with initial approach segment, it has been stated that "an initial approach may be made along a VOR radial, NDB bearing, specified radar vector or a combination thereof". It goes on to add "where none of these is possible, a DME are or a specified heading may be used etc". In the same volume in Chapter 28 dealing with NDB with final approach fix, they have indicated the minimum length of final approach segment for NDB for different categories of aircraft which extends from A to E category of aircraft. These categories include the aircraft being flown by Indian Airlines. I understand that some airports in Australia are still using NDB or a combination of NDB and VOR.

From the above, I have not been able to conclude that NDB is not a safe aid for approach and landing so long as there are proven established approach charts available. While I do not dispute the fact that a VOR would prove more useful. I am unable to agree with ICPA that they cannot fly into the airports which have got only NDB let down facilities. As I have already recommended the setting up of VOR facilities in all the airports where they do not exist. I am sure that even in the airports where only NDB exists now including Defence airports, NAA will be setting up the facilities. It is expected of the NAA that within 24 months of the Award VOR/DVOR facilities will be made available in all the airports where only NDB is made available today and within 18 months at airports where jets operate. As already stated no one can achieve a miracle of establishing such facilities overnight. I have taken into account the various constraints like selection of vendors, procurement, erection and commissioning of equipments while fixing the time limit of 24 months. Therefore, in the meanwhile, the ICPA cannot say that it will not fly to these airports and allow the public to suffer. Special weather minima has already been prescribed by the IA for NDB airfields. I also see that operations to most of these airports are confined to during the period of sun rise and sun set. Therefore, the ICPA should continue to fly to these airports between sun rise and sun set under permissible weather conditions and with a minimum visibility of 3.6 kms. unless higher minimum has been prescribed by IA. While fixing the minima at 3.6 kms I have taken into account the provisions in ICAO DOC No. 9365-AN/910-1982 Manual of All Weather Operations.

Directive No. 4

As regards FDTL, the matter is sub-judice.

Directive No. 5

The right of a pilot to make instrument approach to a runway where facilities are available is not questioned. It is for the Pilot-in-command to decide whether he wants a visual approach or not, depending upon the visibility conditions.

(B) Directive issued vide ICPA letter No. ICPA : CAL : GS (CIR) : 13-92 dated 14th October, 1992

Directive No. 1

Already dealt with in Directive No. 1 of ICPA letter of 10th October, 1992.

Directive No. 2

The ICPA has stated that take offs and landings should be into winds and the manufacturers prescription in this regard are only capabilities of the aircraft and not of the standard pilot. The Indian Airlines have stated that as per their Operations Manual take offs and landings in tail wind conditions are permitted upto the limits laid down for the aircraft. The ICPA has also demanded that the runways upto 6,000 feet there should be no take offs and landings into the wind for runways between 6,000 to 9,000 feet, 5 knots tail wind is acceptable. They have also stated that the pilot is not aware of the true weight of the aeroplane. Finally, they have stated that only for runways beyond 9,000 feet flight manual limitations should be accepted subject to the discretion of the PIC. It is very difficult to accept the contention of the ICPA in this regard particularly when manufacturers have laid down detailed charts regarding aircraft operations under tail wind conditions. One has to accept the manufacturers prescriptions in this regard as these must have been fully looked into by the authorities issuing type certificate to the aircraft and followed by all airlines of the world.

However, I would suggest that where jet operations are being conducted into airfields with short runways, the Indian Airlines may lay down additional safety guidelines for tail wind take offs and landings. This may be worked out by CTE Hyderabad in consultation with the senior pilots of the airlines. As regards the load and trim sheet of the aircraft is concerned, the Indian Airlines authorities preparing the sheet should exercise utmost caution that the weights mentioned therein are the actual weights. The IA Flight Safety division should carry out random checks to ensure this.

Directive No. 3

Regarding operations to Leh. I have already suggested that Boeing 737 operations should be replaced by Airbus A-320 operations at the earliest possible. I have also suggested the procedure to be followed by Indian Airlines before commencing A-320 operations.

Directive No. 4

I have suggested that life jackets should be provided within a period of 24 months.

Directive No. 5

The DGCA directive on inter-section take off must be followed by the Airlines.

Directive No. 6

DGCA has already issued instructions relating to MEL/CDL vide letter No. 8/6/89-AI(I) dated 15-1-1993 to all the airlines.

Directive No. 7

It is the discretion of the Pilot-in-Command to make instrument approaches wherever the facilities are available and he considers it to be appropriate and safe.

Directive No. 8

On alternate weather minima, Indian Airlines have contended that they are following Annex 6, Volume I, para 4.3.5.2. It is for the Pilot-in-Command to assure himself of the status of weather at the destination airfield and his alternate aerodrome before he decides to take off. It is for him to decide in the best interest of the safety of the passengers, his aircraft and crew after he gets a clear briefing on the weather.

Directive No. 9

The NAA has intimated that in all airfields they are following the ICAO standard for provision of fire fighting facilities. It is suggested that to ensure the operational readiness and serviceability of all equipment of the fire stations, the Aerodrome Director should conduct fire drills in his presence at least every month and such drill should be conducted every week by the Officer Incharge of the Fire Station. In order to further ensure this, DGCA Air Safety officers at the level of Senior Air Safety Officers and above should also periodically conduct surprise inspections in coordination with IAAI, NAA and the Directorate of Flight Safety of the Airlines. Wherever there is a degradation in the availability of the fire fighting equipment in an airport, it should be immediately notified and jets should not operate if the degradation is by more than one category required for that aircraft. The Indian Airlines Operations Manual should be accordingly amended.

Directive No. 10

Flight briefing before every flight is very important to conduct a safe flight. The Pilot-in-Command has the main responsibility of getting properly briefed on the weather, cabin crew, the status of Nav and landing aids and about the passengers. The Indian Airlines should lay down a proper drill for the comprehensive briefing of the Pilot-in-Command. If necessary, reporting time could be changed suitably to enable briefing to take place properly. This is possible only when there is a cooperative approach on this issue between the pilots and the management. I have no doubt that both the management and pilots would ensure this.

Directive No. 11

It is not disputed that the cabin crew should be fully trained to discharge their responsibilities. The Indian Airlines have stated that they have fully trained the cabin crew in evacuation and emergency procedures. The positioning of the cabin crew in the aircraft should be done carefully with reference to their experience and training. The Director of Air Safety of Indian Airlines should ensure that the cabin crew are aware of the various emergency procedures and that regular refresher courses are conducted by experts

Directive No. 12

As regards two commanders flying together, I do not find anything unsafe in this practice. The Indian Airlines have stated that as per their Operations Manual only in extreme circumstances, two commanders may be scheduled together and that too with the permission of Operations Manager. Therefore, this does not require any further decision.

Directive No. 13

The ICPA has stated that Ahmedabad, Amritsar, Patna, Tiruchirappalli, Varanasi, Nagpur, Trivandrum and Daboilm although declared International airfields are not in accordance with ICAO specifications. From the airfields mentioned by the ICPA, international flights are few and far between. In all the airfields, Instrument Landing System is available. In the case of Trivandrum, IAAI have stated hat they are taking steps to provide approach lighting system. I have already made recommendation in an earlier paragraph to provide simple approach lighting systems for all instrument runways. Therefore the ICPA contention that they will not operate flights to these airports cannot be accepted.

Directive No. 14

ICPA has mentioned about the apprehension regarding disorientation, vertigo etc. especially while following special procedures for landing conditions while landing in Jammu and Srinagar airports. Special procedures have been laid down for these airports only to avoid an extremely remote contingency. In my view, it is the duty of pilots to discharge their responsibilities to fly under such conditions when certain procedures are laid down by the authorities. As navigational aids such as VOR, DME and radar control are also available at these airports, the pilots should cooperate with the authorities. The pilots should realise that there are certain problems in Jammu and Kashmir and instead of adding to the woes of the Government and public by refusing to fly to these airports, as responsible professionals of the country they must fly to these airports as per the special procedures.

9. CONCLUSIONS

9.1 I have made a series of recommendations concerning Indian Airlines, NAA, DGCA and the ICPA. Although the dispute on safety aspects is between ICPA and the Indian Airlines, inevitably many recommendations concern the National Airports Authority, who under their Act have to provide the airport facilities, navigational and landing aids required for safe operation of aircraft. The Indian Airlines and the ICPA should recognise the fact that setting up of the facilities that have been recommended involves mobilisation of resources identifying supply source, placement of procurement orders and then erecting and commissioning of the aids by NAA. These unavoidably require time, however, efficient an organisation may be. Keeping these factors in view, I have provided a reasonable time period for setting up of the facilities. Till such time the facilities are commissioned, the Indian Airlines and ICPA must ensure that flights to the airports are continued during the period of the day/night which is best suited for safe operations.

9.2 As this award involves action by different agencies, its implementation will require close coordination and monitoring. I, therefore, suggest the setting up of a high level implementation committee under the Chairmanship of the DGCA with the Directors of Operations and Safety of Indian Airlines, Member Operations and Engineering of IAAI and NAA, representatives of the ICPA, and Joint Secretary dealing with the Indian Airlines in the Ministry of Civil Aviation to monitor the implementation of the award within the time-bound programme indicated against various activities. A report of this committee after every meeting may be submitted to the Secretary, Civil Aviation for his review.

9.3 I have tried my best to keep safety as the prime consideration in making my recommendations. I have also attempted to maintain a balance between the forces of urgent necessity and the various constraints inherent in the implementation of programmes. I have no doubt in my mind that what has been stated in the award is certainly not the last word on the subject. New systems are emerging and the entire air navigation communication scene is undergoing a revolutionary change with the introduction of communication, navigation and surveillance system and air traffic management through the help of satellite system. The conventional terrestrial aids will go out of use by the turn of the century and aircraft will be equipped with on-board equipment requiring no terrestrial aids. I am happy that the NAA is already engaged in a major exercise of introducing the most modern equipment such as MSSR with MODE 'S' air route surveillance radars and airport surface detection equipment. What is required for air safety is a cooperative endeavour on the part of airlines, the pilots, the engineers, the air traffic control and the regulatory authorities. I sincerely hope that in the common endeavour of achieving air safety all the organisations and the individuals who are professionals in the areas will cooperate among themselves and usher in the new revolutionary systems into the country and make air travel a great pleasure for the travelling public.

10. SUMMARY OF THE MAIN RECOMMENDATIONS

1. DGCA should conduct safety audit of the Indian Airlines.

2 Wherever deficiencies have been pointed out by the Joint Inspection team of DGCA and Defence authorities in Defence airfields used for civilian operations, NAA should step in to remove the deficiencies where IAF is not able to do so.

3. NAA must have a target date to adopt all the standards of ICAO pertaining to aerodromes which are mandatory and phased plan for adopting ICAO recommended practices.

4. DGCA's overall responsibility for safety has to be properly delineated in respect of the autonomous authorities like the NAA and the IAAI.

5. DVOR with DME be installed at all the airports of India to which jet aircraft operate within a period of 24 months of award. Agra, Chandigarh, Jorhat and Pune being busy airfields for civilian operation, NAA should instal DVOR in these airports within 18 months of the award.

6 NAA/DGCA should make a joint effort to locate a site at Leh within three months for a DVOR.

7. DVOR with DME be installed at Raipur and Dimapur as early as possible.

8. Wherever only NDB is available for navigation as well as approach and landing, operation to these airfields may be restricted to day time flights with 3.6 kms and above visibility conditions unless higher minima has been prescribed, till such time VOR equipments are installed.

9. Flights should continue to Agra, Pune, Gwalior and Chandigarh where the IAF has agreed to provide radar facilities on request.

10. DGCA and NAA should interact with National Aeronautical Laboratory (NAL) to evaluate the new visual approach slope indicator system being developed by them which is reported to be more precise and economical.

11. ICPA must continue to fly to Dibrugarh, Dimapur, Bhuj, Car Nicobar, Leh, Silchar, Vishakhapatanam, Coimbatore, Imphal, Port Blair and Raipur as NAA has assured that a visual approach slope indicator system will be made available in all these airports before 31st July, 1993 and in some of the airports, it will be made available much earlier than that. Flights to these airports could, however, be restricted to between sun rise and sun set till the visual aids are commissioned.

12. All airports to which jet aircraft operate should be equipped with at least simple approach light system and wherever there are Instrument Landing System installed, the lighting system of the appropriate category should be provided within a timeframe of two years. Where, however, land acquisition is not necessary for the installation of approach lights, NAA should start the work forthwith and complete the task within 12 months of the award.

13. Within 12 months of this award all the serviceable runways at NAA airports to which IA operates in the night should be equipped with medium/high intensity runway lights. A schedule of implementation of this recommendation should be furnished to DGCA.

14 NAA should fix responsibility on officials responsible for ensuring continuous serviceability of navigation and landing aid systems which are imperative to air safety.

15 The Directorate of Flight Safety of Indian Airlines should regularly monitor CVRs, FDRs and DFDRs. All the flights of aircraft equipped with Quick Access Recorders should be monitored. As it is possible to computerise the whole process, a Central Monitoring Unit should be set up at Delhi or at CTE Hyderabad to analyse the flights. The feed back to the pilots on the basis of such analysis should be immediate so that corrective action can be taken. Only where deliberate negligence and carelessness or violations of repetitive nature are established, punitive action is warranted. The ICPA should also be fully involved in the monitoring of the CVRs, FDRs and DFDRs by the airlines. DGCA should also monitor CVRs, FDRs and DFDRs with a view to finding out whether pilots have adhered to the laid down procedures and used properly the navigational/ landing aids.

16. The deficiencies pointed out by the ICPA and the DGCA in their inspection reports of NAA/IAAI airfields should be rectified within a time-bound programme. DGCA should monitor it.

17. The responsibility for ensuring that the airport is safe and the navigational and landing aids are functioning well, should be fixed on the Airport Director or Officer Incharge of the Airport.

18. The Indian Airlines should immediately examine in depth the existing training procedures in the CTE Hyderabad and reorganise the training programme in such a manner that discipline to observe meticulously rules and regulations during flights is inculcated amongst the pilots.

19 All aircraft whose take off/landing paths are disposed over water should be provided with life jackets within a period of 24 months.

20. Indian Airlines should reschedule its flights to Kathmandu so that there is no operation between sun set and sun rise.

21 Boeing 737 flights to Leh should be replaced by Airbus A-320 aircraft. Before the start of A-320 operations to Leh, procedures to be followed should be laid down after carrying out a number of test flights in association with the DGCA and the Indian Air Force. Senior commanders and co pilots of Indian Airlines should be full associated in working out of the procedures. Indian Airlines should also consider using A-320 aircraft in the Delhi-Jammu-Leh sector. Should the Indian Airlines have any problem in the short run in using the A-320 aircraft they could operate with Boeing 737 aircraft equipped with GPS/Omega navigation system.

22. Indian Airlines should draw up a schedule for sending pilots for training in tackling on-board emergencies to the Institute of Aviation Medicine at Bangalore. The cabin crew should also be given this training. A time schedule should be drawn up to complete the training. The pilots and cabin crew who refuse to go for this training should not be allowed to go on flights till such time he/she completes the training.

23. Aircraft leaving base stations should be cleared without snags. When aircraft transits a base station during flights, if any snag is observed on any equipment which is unrelated to air safety, the aircraft could carry on provided the time available at the base station is not sufficient to rectify the snag. The Airworthiness authorities of the DGCA must ascertain in respect of each aircraft as to how many snags it has carried without rectification and for what period. Defects under MEL should not be carried forward for more than 48 hours.

24. Professional bodies such as ICPA should be given copies of reports, prepared by investigating officers, Courts and Committees of Inquiry.

25. Periodical seminars should be held of professional bodies and other experts to discuss the findings of investigations to evolve procedures to prevent the occurrence of incidents and accidents. Director of Operations, Director of Air Safety of Indian Airlines, Representatives of NAA, IAAI, Met Department, Pilots', ATCOs and Engineers should meet under the DGCA to discuss various issues concerning safety and to monitor implementation of suggestions emerging in the meetings.

SUMMARY OF MAIN RECOMMENDATIONS RELATING TO ICPA DIRECTIVES.

A Directive No. ICPAP/CAL/GS/(CIR)-09-92 dated 10-10-1992.

Directive No. 1

As VASI/PAPI or similar aid will be provided at all the airports by the NAA before the end of July, 1993, the requirement of the pilots would be met.

Directive No. 2

As flights to Kathmandu will only be between sun rise and sun set, the ICPA pilots should operate to Kathmandu.

Directive No. 3

Till such time VOR/DVOR facilities are made available at airports where only NDB is available now, IA may reschedule its operations to have jet flights to these airfields only during day time. The ICPA should, therefore, continue to fly to these airports between sun rise and sun set under permissible weather conditions.

Directive No. 4

As FDTI is a matter which is subjudice, it has not been dealt with in this award.

Directive No. 5

Pilots have a right to make instrument approaches, where facilities are available, at their discretion.

B Directives issued vide ICPA letter No. ICPA;PCAL; GS/(CIR)-13-92 dated 14th October, 1992.

Directive No. 1

Already dealt with in Directive No. 1 of ICPA letter of 10th October, 1992.

Directive No. 2

Pilots should follow manufacturers limitations regarding take offs and landings under tail wind conditions Wherever jet operations are being conducted into airfields with short runways, the Indian Airlines may lay down additional safety guidelines for tail wind take offs and landings. IA Flight Safety Division should conduct random checks on load and trim sheets to ensure their correctness.

Directive No. 3

Operations to Leh should be replaced by Airlines A-320 aircraft.

Directive No. 4

Life jackets should be provided within 24 months wherever take off/landing paths are disposed over water. For reasons stated in the main body of the report, pilots should continue to fly to Bombay and Goa.

Directive No. 5

DGCA guidelines be followed.

Directive No. 6

DGCA has already issued instructions relating to MEL/CDL vide their letter No. 8/6/89-AI(1) dated 15th January, 1993, to the Airlines.

Directive No. 7

It is the discretion of the Pilot-in-command to make instrument approaches wherever the facilities are available and he considers it to be appropriate and safe.

Directive No. 8

It is for the Pilot-in-command to decide whether to take-off or not after ascertaining weather conditions or originating alternate and destination airports.

Directive No. 9

The National Airport Authority has vide their letter No. NAA/8-4/91-ARI dated 29th December, 1992, has enclosed a statement which clearly shows that the fighting and safety services provided in the airfields are as per ICAO specifications. Separate recommendations have been made in regard to inspection of these facilities by DGCA. The degradation should not be more than one category in respect of an aircraft

Directive No. 10

Complete and thorough briefing should be given to the Pilot-in-Command on the weather, cabin crew, the status of nav and landing aids and about the passengers The Indian Airlines should lay down a drill for this comprehensive briefing. The Pilot-in-command should have the responsibility to take this briefing correctly and in the proper manner.

Directive No. 11

The Director of Flight Safety of Indian Airlines should ensure that the cabin crew are aware of the various emergency procedures and that regular refresher courses are conducted for the cabin crew by experts.

Directive No. 12

As regard two commanders flying together there is nothing unsafe about this practice. However Indian Airlines should ensure that their stipulation in the Operation Manual is followed.

Directive No. 13

The International airfields mentioned by the ICPA are those from which flights are few and far between and Indian Airlines does not undertake any international flight from Daboolim. As instrument landing systems are available in all these airports they are quite safe and pilots should fly to these airports. Recommendations for additional aids have been made in other paragraphs of this award.

Directive No. 14

Jammu and Srinagar airports have adequate navigational/landing aids including radar facilities of the IAF. The ICPA pilots should follow the special procedures laid down for these airports by the authorities.

11. IMPLEMENTATION OF THE AWARD

The award should be implemented within a time bound programme. Its implementation should be monitored by a Committee headed by the DGCA with Members drawn from the airlines, the ICPA, the IAAI, the NAA and the Joint Secretary dealing with the Indian Airlines in the Ministry. A report of this Committee should be submitted to the Secretary for his review.

New Delhi.

18th February, 1993.

M. R. SIVARAMAN,
Director General &
Additional Secretary
Ministry of Civil Aviation.

ANNEXURE

AERODROME FACILITIES—EXISTING AND RECOMMENDED

Sl. No.	Name of Airport	Existing			Recommended
		PAPI/VASI/ AVASI	Landing Aids	Category of Safety services maintained.	
(1)	(2)	(3)	(4)	(5)	(6)
1.	Agartala	*2 Bar Avasi-36 2 Bar Avasi-18	Vor, Dme, Ils, Ndb	6	*Reported to be available now.
2.	Ahmedabad	3 Bar Avasi-05 3 Bar Avasi-23	Vor, Dme, Ils, Ndb.	7	
3.	Amritsar	2 Bar Avasi-16 (PDC 31-03-93) 2 Bar Avasi-34	Vor, Dme, Ils, Ndb	6	
4.	Aurangabad	Papi-09 Papi-27	Vor, Dme, Ndb. Ils (proposed)	6	
5.	Bhavnagar	3 Bar Avasi-07 3 Bar Avasi-25	Vor, Dme, Ndb	6	
6.	Bhopal	3 Bar Avasi-12 3 Bar Avasi-30 (PDC 31-03-93)	Vor, Dme, Ndb, Ils	6	
7.	Bhubaneshwar	2 Bar Avasi-14 2 Bar Avasi-32 (PDC 30-04-93)	Vor, Dme, Ndb. (Ils proposed)	6	
8.	Coimbatore	2 Bar Avasi-05 (PDC 31-01-93) 2 Bar Avasi-23	Dme, Ndb Ils proposed	6	Vor by end 1993
9.	Calicut	Papi-10 Papi-28	Vor, Dme, Ndb Ils proposed	6	
10.	Dibrugarh	Papi 05/23 (PDC 28-02-93)	Vor, Ils, Ndb	5	
11.	Dimapur	Papi-12) PDC Papi-30) 28-2-93	Ndb, Dme Vor Proposed.	6	
12.	Guwahati	3 Bar Avasi-02 3 Bar Avasi-20	Vor, Ndb, Dme Ils	7	
13.	Hyderabad	Papi-09 Papi-27	Vor, Dme, Ndb Ils.	8	
14.	Imphal	3 Bar Vasi-04 3 Bar Vasi-22	Vor, Ndb, Dme, Ils	6	
15.	Indore	3 Bar Avasi-07 3 Bar Avasi-25	Vor, Ndb, Ils, proposed.	6	
16.	Jaipur	Avasi-09 Avasi-27	Vor, Dme, Ndb, Ils	6	

(1)	(2)	(3)	(4)	(5)	(6)
17.	Khajuraho	2 Bar Avasi-01 (PDC 28-2-93) 3 Bar Avasi-19	Vor, Ndb, Ils		
18.	Lucknow	2 Bar Avasi-09 (PDC 28-2-93) 2 Bar Avasi-27	Vor, Dme, Ndb, Ils	6	
19.	Madurai	Papi-09 Papi-27	Vor, Dme, Ndb.	6	
20.	Mangalore	3 Bar Avasi-09 3 Bar Avasi-27	Vor, Dme, Ndb	6	
21.	Nagpur	2 Bar Vasi-14 2 Bar Avasi-32 (PDC 28-2-93)	Vor, Dme, Ndb, Ils	6	
22.	Patna	3 Bar Vasi-07 3 Bar Vasi-25	Vor, Dme, Ndb. Ils	6	
23.	Raipur	Papi-06 Papi-24	Ndb Vor, (proposed)	6	Vor by Sept. 1993
24.	Rajkot	3 Bar Avasi-05 3 Bar Avasi-23	Vor, Ndb.	6	
25.	Ranchi	3 Bar Vasi-13 3 Bar Vasi-31	Vor, Dme, Ndb. Ils proposed	6	
26.	Trichi	Papi-09 Papi-27	Vor, Dme, Ndb, Ils.	6	
27.	Udaipur	2 Bar Avasi-08 PDC 28-2-93 3 Bar Vasi-26	Vor, Ndb.	6	
28.	Varanasi	3 Bar Avasi-09 PDC 28-02-93 3 Bar Avasi-27	Vor, Ndb, Dme, Ils	6	
29.	Vadodra	3 Bar Avasi-04 3 Bar Avasi-22	Vor, Ndb, Ils proposed.	6	
30.	Delhi	3 Bar Vasi-10 3 Bar Vasi-28 Papi-10) PDC Papi-28) 2 Bar Vasi-09 3 Bar Vasi-27	Vor, Dme, Ndb Ils Rwy 28 Ils -27 work in progress	9	
31.	Bombay	3 Bar Vasi-09 3 Bar Vasi-27	Vor, Dme, Ndb, Ils	9	
32.	Calcutta	3 Bar Vasi-19L 3 Bar Vasi-01R Avasi-01L	Vor, Dme, Ndb, Ils-Rwy 19L Ils Rwy 01R	8	
33.	Madras	3 Bar Vasi-07 3 Bar Vasi-25	Vor, Dme, Ndb. Ils	8	
34.	Trivandrum	3 Bar Vasi-32	Vor, Dme, Ndb, Ils.	7	

AERODROME FACILITIES—EXISTING AND RECOMMENDED

Sl. No.	Name of Airport	Existing Papi/Vasi/Avasi	Existing Landing Aids	Recommended
(1)	(2)	(3)	(4)	(5)
	DEFENCE AIRFIELDS :			
35.	Agra	Avasi-05 Avasi-23	Ndb, Ils	Dvor in 18 months
36.	Allahabad	Avasi-12 Avasi-30	Ndb	Dvor in 24 months
37.	Bagdogra	Avasi-18 Avasi-36	Vor	
38.	Bangalore	Papi-09 Papi-27	Vor, Dme, Ndb, Ils.	
39.	Bhuj	Avasi-05 Avasi-23	Ndb	Dvor in 24 month
40.	Car-Nicobar	Papi-02) Pdc Papi-20) 31-7-93	Ndb	Dvor in 24 months
41.	Chandigarh	Avasi-11 Avasi-29	Ndb, Ils	Dvor in 18 months
42.	Cochin	Vasi-35	Vor	
43.	Dabolim (Goa)	Papi-08 Papi-26	Vor, Ndb, Ils	
44.	Gwalior	Avasi-06 Avasi-24	Ndb, Ils	Dvor in 24 months
45.	Jammu	Avasi-18 Avasi-24	Vor, Ilt, Ndb	
46.	Jamnagar	Avasi-06 Avasi-24	Ndb	Dvor in 24 months
47.	Jodhpur	Avasi-05 Avasi-23	Vor, Ndb	
48.	Jorhat	Avasi-04 Avasi-22	Ndb.	Dvor in 18 months
49.	Leh	Avasi-07 Papi-07) Pdc Papi-25) 30-4-93	Ndb	Site location in 3 months
50.	Kanpur (Chakeri)	Avasi-09 Avasi-27	Ndb	Dvor in 2 months
51.	Port-Blair	Vasi-04	Vor, Dme, Ndb	
52.	Pune	Avasi-10 Avasi-28	Ndb	Dvor in 18 months
53.	Silchar	Papi-06) Pdc. Papi-24) 31-7-93	Vor. Ndb.	

(1)	(2)	(3)	(4)	(5)
54.	Srinagar	Avasi-13 Avasi-31	Vor, Dme, Ndb Ils	
55.	Tezpur	Avasi-05 Avasi-23	Ndb	Dvor in 24 months
56.	Vishakhapatnam	Papi-05) Pdc. Papi-23) 31-7-93	Vor, Ndb, Dme	
57.	Gorakhpur	Avasi-11 Avasi-29	Ndb	Dvor in 24 months

Note :—Simple Approach Lighting System (SALS) has been recommended to be provided in 24 months for all airports to which Indian Airlines operate-in the night where not yet provided. Where availability of land is not a problem SALS should be provided within 12 months.

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